

ABSTRACT OF DISCLOSURE

[071] A method of boundary auto-calibration for proportional poppet valve pressure control estimates the boundary deviation of the valve. A pressure command signal is detected and a pressure command derivative over time is obtained. Which closing boundary should be updated is decided based on the sign of the pressure command derivative. A pressure error is obtained by subtracting an actual wheel brake pressure from its pressure command. Then, a modified pressure error is calculated, and a pressure command signal is evaluated to determine whether a braking maneuver is gentle. Next, the modified pressure error is implemented in the estimation. Finally, a boundary table is updated using the resultant boundary deviation estimate. An alternate embodiment implements a fast boundary auto-calibration scheme including a quasi-closed-loop pressure control system using one cycle of pressure upward sweep and pressure downward sweep to cover the entire operating range of pressures for the valves.